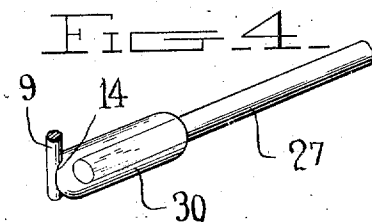
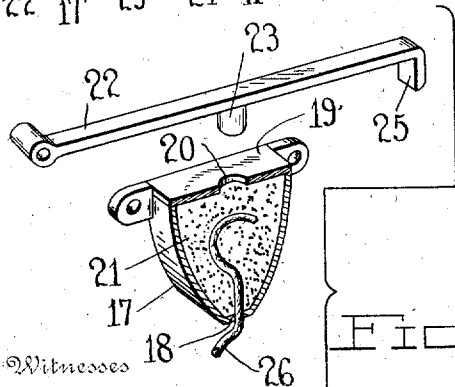
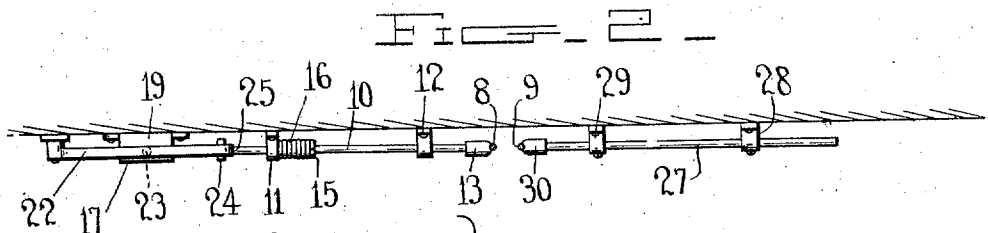
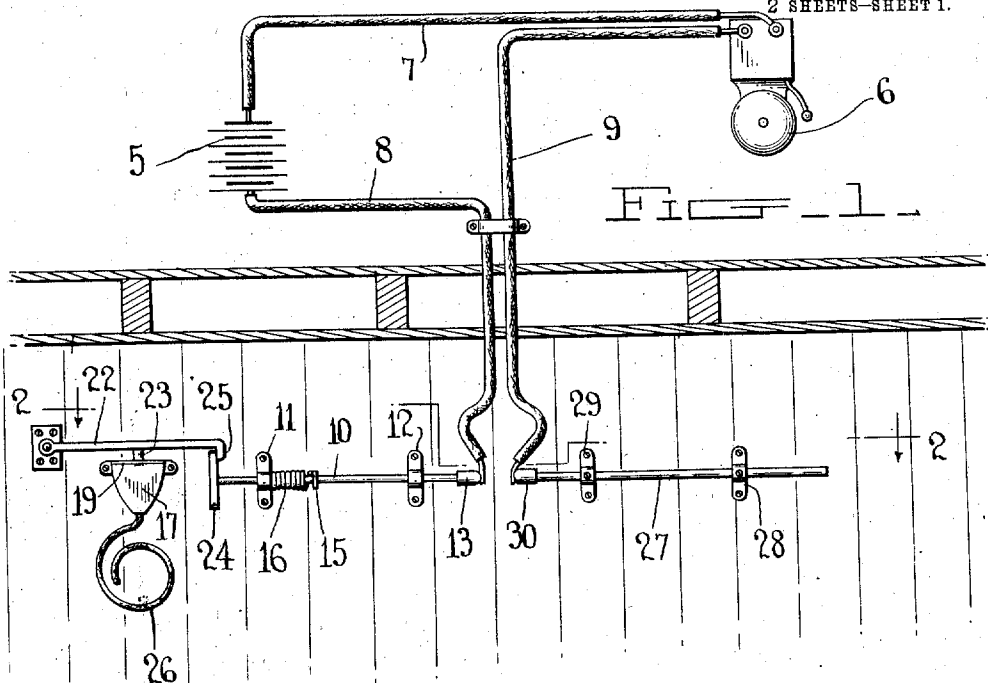


J. W. GRIFFITH
 AUTOMATIC FIRE ALARM.
 APPLICATION FILED MAR. 28, 1910.

986,279.

Patented Mar. 7, 1911.

2 SHEETS—SHEET 1.



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986,279.

2 SHEETS—SHEET 2.

FIGS.

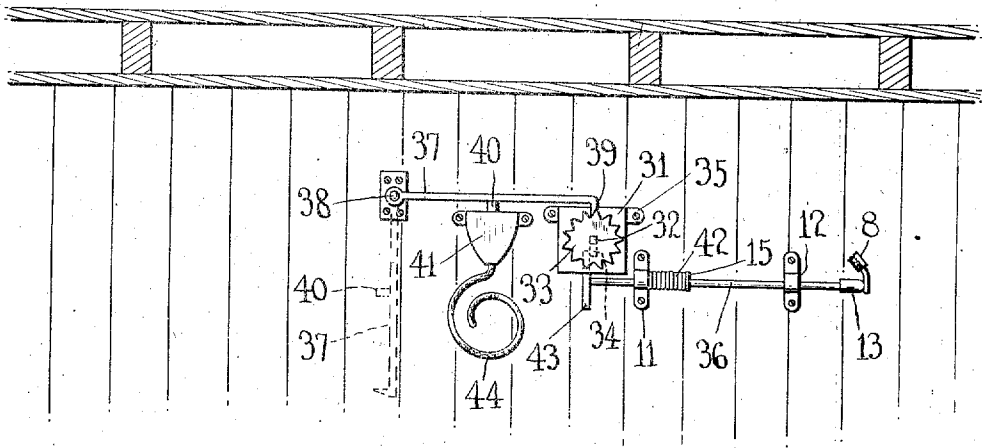
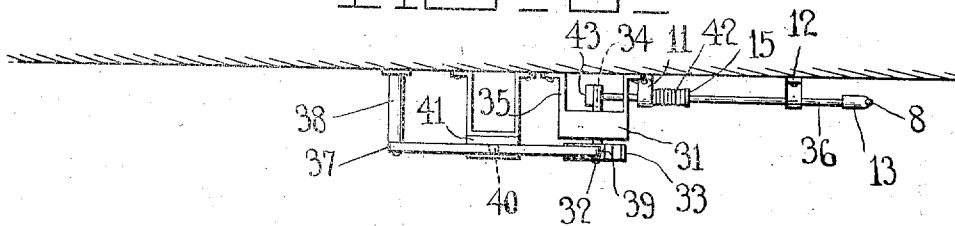
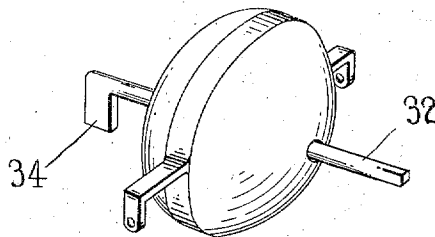


FIG. 6



Fi 7



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AUTOMATIC FIRE-ALARM

986,279.

Specification of Letters Patent.

Patented Mar. 7, 1911.

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To all whom it may concern:

Be it known that I, JOHN W. GRIFFITH, a citizen of the United States, residing at Greenfield, in the county of Weakley, State of Tennessee, have invented certain new and useful Improvements in Automatic Fire-Alarms; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in fire alarms and more particularly to what is known as the automatic type of fire alarms.

It has for its object the provision of a device of that kind including a normally open electric circuit and a circuit closing rod held in inoperative position and so arranged that in event of fire certain mechanism will be operated to release the circuit closing rod so that the latter will move to circuit closing position, whereby the alarm will be sounded.

With these and other objects in view as will more fully hereinafter appear, the present invention consists in certain novel details of construction and arrangement of parts, hereinafter fully described, illustrated in the accompanying drawings and more particularly pointed out in the appended claims; it being understood that various changes in the form, proportion, size and minor details of the device may be made without departing from the spirit or sacrificing any of the advantages of the invention.

In the accompanying drawings forming part of the specification:—Figure 1 is a front elevation of the device and showing a diagrammatic view of the circuit. Fig. 2 is a sectional plan view approximately on the line 2—2 of Fig. 1. Fig. 3 is a detailed perspective of the keeper and receptacle for the powder employed to actuate the keeper. Fig. 4 is a similar view of one end portion of the circuit closing rod. Fig. 5 is a front elevation of a modified form of the device. Fig. 6 is a plan view of the same. Fig. 7 is a detailed perspective of the casing containing the spring for sounding the signal.

Similar numerals of reference are employed to designate corresponding parts throughout.

As shown in Fig. 1 the device is applied to the side wall of a room or building and

the alarm located at a distance from the same. While I have shown but one signal or alarm it must be understood that I am not to be limited to this specific number since it will be understood, from what will appear later, how any number of alarms or signals might be employed and located at various places without departing from the spirit of the invention.

The batteries for generating the electric current are designated in general by the numeral 5 and the alarm or signal bell by the numeral 6; electric connection between one pole of the battery and one pole of the bell is established by means of a conducting wire 7 while a similar conducting wire 8 has one end connected to the opposite terminal of the battery and its free end leads to a position adjacent the device, forming the subject matter of the present invention and to be presently described. A conducting wire 9 has one terminal secured to the opposite pole of the bell and its free end leads to a point in juxtaposition with the free terminal of the wire 8. With this construction it is evident when the terminals of the conducting wires 8 and 9 are brought into contact the circuit will be completed and the bell sounded.

What will subsequently be termed a circuit closing rod is designated by the numeral 10. This member is slidably fitted in a pair of guides 11 and 12 secured to the side wall of a room or building or other support. The circuit closing rod at one end is provided with an enlarged head 13. The head 13 is formed of glass or other insulating material and the terminal of said head is provided with a groove 14, corresponding in depth to approximately one-half the diameter of the conducting wire 8. The free end of the conducting wire 8 is designed to enter this groove so that accidental displacement from the circuit closing rod will be prevented. The intermediate portion of the circuit closing rod or that located between the guides 11 and 12 is provided with a fixed flange or collar 15, and encircling that portion of the rod between the collar 15 is a helical compression spring 16, the opposite terminals of which bear on the collar 15, and the guide 11, or that farthest removed from the insulating head 13. With this construction it is evident when the spring is compressed, by virtue of moving the head end of the rod toward its adjacent

guide, the terminals of the circuit will be separated and when the force which moves the circuit closing rod to inoperative position is removed, the rod will, by virtue of the spring 16, move outwardly, whereby the circuit will be closed.

In order that the rod may be held in inoperative position until it is necessary to close the circuit and give the alarm as in case of fire the following construction is employed:

By reference now to Figs. 1 and 3 it will be seen that secured to the side wall or other support is a metallic casing 17. The lower end of this casing is provided with a somewhat contracted opening 18, while its upper end is provided with a cover 19, having an enlarged central opening 20. The casing is arranged a trifle above the horizontal plane of the circuit closing rod 10 and is designed to contain a quantity of powder or explosive substance.

By reference now to Figs. 1 and 2, it will be seen that pivoted to the side wall or other support and at a point removed from that side of the casing remote from the circuit closing rod is one end of what will subsequently be termed a keeper 22. This member is preferably formed of a single piece of bar iron or similar material and on its lower side is provided with a lateral stud 23, which is adapted to nicely fit within the enlarged opening 20, in the cover of the casing, it being understood that the keeper is positioned slightly above the plane of the casing. That end of the circuit closing rod remote from the head 13 is provided with an enlarged disk 24, the upper side of which is a trifle above the plane of the casing 17, and the free end of the keeper 22 terminates in a downward extension 25, adapted to engage with one face of the disk 24. The relative positions of the parts are such that when the circuit closing rod is moved toward the casing 17 so as to maintain the rod in inoperative position, the free end of the keeper 22 will engage with the disk 24, and hold the rod in inoperative position against the action of the spring 16. As before stated, when the parts are so positioned, the stud 23 will extend through the opening 20 in the top or cover of the casing. A suitable fuse 26 is insertible through the opening 18 in the lower end of the casing and is embedded in the powder 21. The free end of this fuse may be extended in any direction or it may terminate in branches to cover certain portions of the walls or ceiling of the room. Thus it will be seen in case of fire the fuse will be ignited when the flame reaches the latter, whereby the powder within the casing will be ignited and explode, thus forcing the stud 23 and keeper upwardly and outwardly. This upward and outward move-

ment of the keeper will release the circuit closing rod, whereby the latter, by virtue of the spring 16, will move to closing position and the alarm sounded. The terminal of the conducting wire opposite to the terminal in engagement with the head 13 is supported against movement by means of a rod 27, which is held against movement in a pair of brackets 28 and 29, secured to the side wall and in a plane with the guides 12 and 13. One terminal of the rod 27 is provided with an insulated head 30 having a groove for the reception of the terminal of the wire 9. Thus it will be seen when the parts move to circuit closing position the said circuit will not be accidentally opened such as might occur were the conducting wire 9 not rigidly held.

In the modified form illustrated in Figs. 5 to 7 inclusive the parts are the same with the exception that a spring actuated alarm is employed in connection with the electric operated alarm. In this instance a casing 31 is provided, the said casing being preferably formed of bell metal and in two sections. A shaft 32 extends through the central portions of the said sections and at one end terminates in a toothed wheel 33, which is arranged in advance of the outer section. The opposite terminal of the shaft is provided with a downward extension 34. That portion of the shaft within the casing has secured thereto one terminal of a coil spring, (not shown), the said coil spring being suitably connected to a clock work within the casing, the latter being provided with a striker to vibrate against the sections when the spring is released. Since the bell just described, forms no part of the present invention, a detailed description of its parts need not be given since it will be understood that any form of spring operated bell may be employed in connection with the device. The casing 31 is held spaced from the adjacent wall by bracket feet 35, so that the end of the shaft provided with an extension 34 may be brought into engagement with the circuit closing rod 36, it being understood that the extension 34 is of greater length than the width of said bracket feet so that when it extends vertically downward as shown in Figs. 5 and 6, its lower end will extend below the bracket feet. The keeper 37 is supported from the shank 38 which is arranged a trifle above the plane of the bell casing and extends considerably in advance of the latter so that the free end of the keeper which is provided with a down-turned extension 39 may engage with the toothed wheel 33, at the outer end of the shaft. Like the keeper 22 the last described keeper 37 is provided on its lower side with a medially arranged stud 40 to enter the opening at the top of the casing 41.

In setting the parts, just described, the

circuit closing rod is moved against the action of its spring until the disk 43 at its inner end is in engagement with the down-turned extension 34 of the shaft 32. When the parts are so positioned the extension 39 at the free end of the keeper 37 is brought into engagement with the toothed wheel 33, whereby longitudinal movement of the circuit closing rod will be prevented until the powder in the casing 41 is exploded by the burning of the fuse 44, whereby the keeper will move upwardly and outwardly from engagement with the toothed wheel 33. When this takes place, it being understood that the spring within the casing has been wound the extension 34 on the shaft 32 will rotate away from the disk 43 of the circuit closing rod, whereby the latter will move to circuit closing position and sound the alarm at a distance simultaneously with the spring actuated alarm. Thus it will be seen that I have provided a device which is exceedingly simple in structure and comparatively inexpensive to manufacture, embodying few parts and these so arranged that the danger of derangement will be reduced to a minimum.

What is claimed as new, is:—

1. In a fire alarm, a normally open electric circuit, the terminals of the conducting wires of which are arranged in juxtaposition, a spring actuated circuit closing rod having one end in engagement with one of the conducting wires, a casing containing an explosive substance, and a keeper having a portion seated within the casing and one end in engagement with the circuit closing rod and operating to hold the latter in inoperative position.

2. In a fire alarm, a normally open electric circuit, the terminals of the conducting wires of which are arranged in juxtaposition, a spring pressed circuit closing rod being

provided at one end with a head of insulating material having a groove for the reception of the terminal of one of said conducting wires, a casing containing an explosive substance and a keeper having a portion seated within the casing and one end in engagement with the circuit closing rod and operating to hold the latter in inoperative position.

3. In a fire alarm, a normally open electric circuit, the terminals of the conducting wires of which are arranged in juxtaposition, a spring pressed circuit closing rod having one end in engagement with one of said conducting wires, a casing containing an explosive substance located adjacent said rod, and a keeper having one end pivoted at a point adjacent said casing and provided with a stud seated in one end of the casing, the free end of said keeper being in engagement with the circuit closing rod and operating to hold the latter in inoperative position.

4. In a fire alarm, a normally open electric circuit, the terminals of the conducting wires of which are arranged in juxtaposition, a pair of rods provided at their inner ends with heads of insulating material having grooves for the reception of the terminals of said conducting wires, one of said rods being movable and spring pressed, a casing containing an explosive substance located adjacent the movable rod and a keeper having a portion seated in said casing, and provided at one end with an extension to engage that end of the movable rod and serving to hold the latter in inoperative position.

In testimony whereof, I affix my signature, in presence of two witnesses.

JOHN W. GRIFFITH.

Witnesses:

S. G. ABERNATHY,
Jno. B. McADAMS.